DOES HIGHER-ORDER THINKING IMPINGE ON LEARNER-CENTRIC DIGITAL APPROACH?

By

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ABSTRACT

Humans are social beings and the social cognition focuses on how one form impressions of other people, interpret the meaning of other people's behaviour and how people's behaviour is affected by our attitudes. The school provides complex social situations and in order to thrive, students must possess social cognition, the process of thinking about how other people are likely to think, act, and react. Impact of technology on learning has not been answered clearly many years after the introduction of ICT into classrooms. Today there are optimist and pessimist views regarding the use of ICT in Education. The main objective of Digital classroom is to enhance interactive learning through teaching pedagogies that provide opportunities for authentic, contextualised assessment that supports learning in a digital context. Digital classroom incorporates contemporary teaching and learning strategies. It provides the basis for engaging students in actively constructing and applying rich learning in purposeful and meaningful ways. The integration of ICT in social cognitive development is a complex and multidimensional process, including many dynamics such as ICT tools, teachers, students, school administration, educational programmes and school culture. While using digital media devices, students of today need active participation and involvement rather than playing a passive role. This means integrating the use of smart phones, tablets, and laptops in on-ground classrooms. They are also looking for the emotional satisfaction of using and interacting with these products. The main purpose of this paper is to make an inquiry on how social cognition impinges on learner-centered digital classroom in an Educational view. It also provides an understanding of how the mind is influenced by social interactions and how to implement technology to enhance social cognitive learning.

Key words: Social Cognition, ICT, Digital Classroom, Cooperative Learning.

INTRODUCTION

Higher order thinking or Social cognition refers to the cognitive thinking skills of problem solving, reasoning, critical thinking, decision making and metacognition (Galotti, 2011). The learner-centered teaching and learning has encouraged instructors to create challenging and novel environments that help students to link new information to old, seek meaningful knowledge, and think about their own thinking. Technology based learning is now deemed heavily influenced by social interactions. Environmental factors such as culture and technology plays a vital role in individualized learning. Social cognitive thinking provides alternative instructional strategies for problem solving, creative thinking, critical thinking, metacognition as well as co-operative learning.

1. Social Cognition and Digital Learners' Scope

The mind is a mysterious science. Social cognition is the cognitive processes involved in processing information about other people and social situations (Mathew & Raja, 2015a). Digital technologies have profoundly changed notions of literacy, knowledge and communication, altering the cultural edifice of life in contemporary society and impacting on the classroom. 'Learning and communicating in a world of rapid change will inevitably require the ability to produce meaningful combinations of digital technology, knowledge and skills. Many years after the introduction of Information Communication Technology (ICT) into Educational Systems, people face two opposing expressions on the use of technology. First is optimist rhetoric which supports the idea that ICT can raise

standards, if it is used in very carefully designed ways. Conversely, on the other side, the pessimist rhetoric argues that, parents and teachers are distracted from the provision of children's basic needs by pressure to introduce them to technology.

2. Higher Order Thinking – The Concept

Several major concepts relevant to the higher order thinking processes are to follow, based on three assumptions about thinking and learning. The levels of thinking cannot be unmeshed from the levels of learning; they involve interdependent, multiple components and levels. Thinking can be learned without subject matter content; but it is only a theoretical point. In real life, students learn content in both community and school experiences, no matter what theorists conclude, and the concepts and vocabulary they learn in the prior year will help them to learn both higher order thinking skills and new content in the coming year. Higher order thinking involves a variety of thinking processes applied to complex situations and having multiple variables.

3. Social Cognition – An Affect on Learners

Social cognition refers to the manner in which one interprets, analyzes, remembers, and uses information about the social world (Mathew & Raja, 2015b). Social influences including the media have adverse effect on children. They are continuously learn and construct the meaning throughout their whole life from communications within their community and presently through the Digital Technology. The technology provides new and innovative methods to create social learning environments (Allport, 1985). One aspect of ICT is the ability to interact and observe others.

Human expectations, beliefs, emotional bents and cognitive competencies are developed and modified by social influences that convey information and activate emotional reactions through modeling, instruction and social persuasion. Students are constantly surrounded by social influences whether it is a societal influence or a media influence. Regardless of the form, the influence is still there. Humans have evolved an advanced capacity for observational learning, that enables them to expand their knowledge and skills rapidly through information conveyed by the rich variety of models (Bandura, 2009). There are array of approaches both immediate and distant that socially influence children's learning or cognition. The asynchronomous communication of technology offers students a palette of online information resources like instructor notes, expert reports, movies, games, course updates, interactive experiments, electronic libraries, assignments and new route for student social interaction and dialogue (Harasim, Hiltz, Teles & Turoff, 1995).

4. Digital Classroom - A Learner Centric Approach

The digital classroom is the technology-enabled classroom where learning is fully supported through strategic use of ICTs. Digital classroom is defined as the convergence of technical skills, pedagogical practices and understanding of curriculum design appropriate for digital learners (Mangal, 2004). In education, the digital classroom comprises a wide range of initiatives and processes, and includes the introduction of digital tools and gadgets as a part of the learning environment. This may or may not include digital records and repositories, facilitating remote access through ICTs and infrastructure, improving the quality of access to education, building programmes to accommodate for alternative and contested perspectives, building peer knowledge communities and knowledge production, and including non-canonical material and experiences into formal institutions of education. The digital classroom is often thought to be a virtualization of classrooms where virtual and immersive tools are the part of learning structure and the methods associated with learning. The Digital classroom enhances opportunities for authentic, contextualised assessment that supports learning in a digital context. It incorporates contemporary teaching and learning strategies. It features personalized approaches, intellectual rigour and connectedness to global contexts. It also supports and collaborate classroom environments and a clear alignment of curriculum assessment and reporting to improve outcomes for students.

The digital classroom cannot be viewed separately from the e-learning spaces or digital content programmes as teachers need to understand the ways in which students will work and learn in a digital and connected environment. A

key dependency or factor is a focus on improving students' interactive learning capacity. It is vital for students to become confident, creative and productive in a digital world. It is also important for students to understand the impact of ICT on society. Students with proficient digital acquaintance have broad and complex knowledge and skills. They work digitally to: deepen knowledge and create knowledge through inquiry processes, interacting with communities of people, experts and information; build ideas, learning solutions, products and plans through creative processes as well as for expression and reflection; communicate, share and work collaboratively in local and global environments; learn and work legally, ethically and safely as responsible users and creators; develop new thinking, learning and problem solving skills to support their ongoing development. Thereby digital learning enhances the students to break the wall between the traditional classroom chalk-board climates to collaborative learning. Teaching methodology becomes ICT based and teachers ought to adjust their teaching strategy and that is the core of digital classroom.

4.1 Problem Solving for Digital Learning

A problem is a situation in which the individual wants to do something but does not know the course of action needed to get what he or she wants" (Crowl et al., 1997). The process of problem solving requires a series of successive decisions, each of which depends on the outcomes of those that precede it. The learner must possess skill of synthesis or putting together of ideas in novel ways in order to create new ideas. In the cognitive learning domain of Bloom's taxonomy, the importance is given to analysis, synthesis and evaluation (Bloom et al., 1956) to describe higher order outcomes of learning associated with creative or productive thinking.

4.2 Creative Thinking for Digital Learning

Studies revealing from Davis (1992), Perkins (1986) and De Bono (1994) have championed instructional techniques that help students' divergent or creative thinking. Creative thinking techniques for digital learning might include free writing or metaphorical thinking on a key course topic. It facilitates the skills of brain storming, simulations and role plays. Thoughtful planning also impacts the successful use of hypermedia environments, since students and instructors often want to instantly capture information (Davis, 1992).

4.3 Critical Thinking for Digital Learning

Critical thinking is used to select information, evaluate potential solutions, determine the strength of an argument, recognize bias and draw appropriate conclusions (Boyer, 1998). The hypermedia and free association exercises are creative devices that help students sort out the hierarchy and logical flow of ideas. Students mapping of discussion threads is one simple and useful application of idea. The instructional activities of spatial representations provides information about the opportunities for the students to display knowledge in depth and overall conceptual understanding. Another critical thinking method with strong ties to creative thinking activities is the use of voting methods. The nominal group process is often used to rank and categorize student brainstormed ideas (Bonk & Smith, 1996). Besides, idea ranking, various writing to think activities assist in fostering student reflection and critical evaluation. Students might list the positive, negative and interesting aspects of an assignment or topic or most interesting points of a lesson (Angelo & Cross,1993). Conferencing debates, guided question reflection logs and case analyses too fall within the realm of critical thinking writing activities. Embedding these opportunities for reflection and summarization develop student learning and restructure knowledge.

4.4 Metacognition for Digital Learning

Metacognition refers to knowledge or awareness about one's own cognitive processes and functioning (Galotti, 2011). Critical analysis skill development is the area of concern for cognitive studies. One aspect of the problem is concerned with making sense of the information available. As one move into the edge of knowledge worker and the knowledge organization, the importance of metacognitive skills would be increased. However, well-organized and well-communicated information sources may become inevitable. The techniques of information analysis and concept mapping would enhance student's comprehension skills.

5. Co-operative Learning - Interactive Teaching

Iterative teaching-learning is different from teaching online, because, it allows to open up teaching and learning in ways that significantly education does not permit. When the internet is brought into teaching, and truly embrace the digital engenders, learners are exposed to a whole new world of networked and connected learning. Teaching pedagogy must inevitably acknowledge the ability of students to control and choose contents for their own learning. One cannot compensate for all the ways that students will choose to procure and curate their learning in digital spaces; and so, it becomes vital to teach students not about particular tools, but about how to choose tools for their use. For students to choose tools for their own use, they must have a sense of conscientiousness as learners. Digital classroom is necessarily learner-centric. Teachers must empower students to use ICT in the ways that support their learning. It is self-paced learning. It means integrating the use of smart phones, tablets, and laptops in on-ground classrooms. It also means inviting students to connect with each other outside of the ways we intend them to connect.

6. Digital Classroom - Purpose

Cognitive processes are emergent brain activities that exert determinative influence. Through the exercise of forethought, children motivate themselves and guide their actions in anticipation of future events. When estimated over a long time schedule on matters of value, a forethoughtful perspective provides direction, coherence, and meaning to one's life (Bandura, 2001). Foresight allows children to choose their course of action. When digital technologies are initiated in teaching-learning process, the cognitive arena will influence its learning. The major purpose of employing digital learning in the classroom is:

- *Student-centered Learning:* Students will show accountability for learning when collaborative activities are implemented through technology
- *Motivation:* This is important as we have learned that, we must first engage the attention of our students before they are ready to learn
- *Learning Styles Addressed:* Digital Learning allows teachers to address various learning styles in the classroom. Students can see, hear and imagine what things feel like as multimedia is used to bring a subject to life
- *Access to Limitless Resources for Teaching and Learning:* Teachers are no longer limited to textbooks as vast amounts of knowledge and teaching ideas may be explored.

7. Significance of ICT - Classroom Learning

There are a number of areas that comprise the importance of ICT in classroom climate. They are:

- *Moving towards using Less Paper:* The digital classroom takes advantage of being able to write on the tablet in a variety of programmes because it make written work available anytime and anywhere.
- *Use of Projector with Tablet*: The digital teacher uses the projected tablet screen to display and write most notes and work in class.
- *Use of Digital Resources and Digital Tools*: The digital teacher routinely uses digital resources and has his/her students use them for a variety of purposes including research, texts, and multimedia.
- *Inquiry, Project, & Problem-Based Learning*: One-to-one technology puts powerful tools in the hands of students which can be used with a more student-centered approach to curriculum which challenges students to find answers to problems and create meaningful digital products.
- *Class Web Sites*: A digital classroom is strongly supported by a class website, extending learning opportunities beyond the walls of a classroom and the time period of the class.

8. Educational Implications

The higher-order thinking skills are highly foreseeable in educational systems. Many successful programmes for the development of critical thinking skills have been developed and implemented. Analysis of such programmes reveals that, they tend to have certain characteristics in common. They tend to use experimental learning techniques. They tend to setup learning situations which present a problem or a complex task for the learners to deal with and assist the learners to draw conclusions.

In social cognitive learning, the effects of action are a

special case of observational learning. In learning by direct experience, people construct conceptions of behaviour from observing the property of their actions; in learning by modeling, they derive the conceptions from observing the structure of the behaviour being modeled. Social cognition has its roots in social psychology which attempts to understand and explain how the thoughts, feelings, and behaviour of individuals are influenced by the actual, imagined, or implied presence of others (Mathew & Raja, 2015c).

Teachers build students' self-confidence by initiating interactive learning, developing pedagogical tool for communication and by inducing curiosity in student's learning in an arena where students are the experts (Bowers-Campbell, 2008). Teachers can create personal blogs that would help students to seek out help with school assignments, so to create a group for them to exchange knowledge. It would increase their interest and responsibility in the subject. The digital devices are supportive in empowering students to take responsibility for their own learning goals. Facebook is one such site for social networking. With the continual advancement of the Internet, more helpful and safer sites are appearing. Social networking is just one benefit of technology and another is video games. It enhances the social cognitive aspects of their learning.

In playing of video games, children mobilize energies that many educators, and parents wish to dedicate to learning. To harness these energies, one could implement video games into the classroom or have the children make their own video games (Kafai & Resnick, 1996). Games could be created, tested and discussed in a group setting or even online. Teachers must make sure the students' learning intentions, choice of learning activities, and choice of technological support. They should seek professional learning opportunities to build their understanding and skills of how to integrate technology with the kind of effective teaching approaches. Teachers can build their own knowledge and understanding of how technologies can be used to support differentiated and special learning needs, accessibility and assistive technologies. They must generate interest among children through technologies in order to develop the social cognitive skills such as creative thinking, critical thinking and problem solving.

Principals and school leaders must ensure that, teachers have a clear understanding of how effective learning looks like, and how technologies can enhance children. They can also make certain variety of professional learning opportunities that are available for teachers to unpack effective ways that technologies can be integrated into effective, student-focused pedagogy. They must provide leadership so that, teachers are confident to model co-constructed, personalized, and collaborative e-Learning practices. They should provide learning environments and spaces within the school that are adequately resourced and support the pedagogical intent. Adopt "teaching as inquiry" processes as a trial to the new ways of thinking and working in the classroom.

Conclusion

The rapid pace of informational, social, and technological change is placing a premium on personal significance for self-development and self-renewal throughout the life course. The informational, social and technological changes provide incentives and drive the desire to learn in children. ICT is a good medium for actively engaging students. Through digital classroom, reflecting and sharing, children are able to construct meaning in what they have learned. Social cognitive learning is the key to creating higher-order thinking and with continual enhancement of technology learning is inevitable. Children can also facilitate depth of understanding by integrating interactive teaching pedagogy into the fabric of learning. The intellectual tools that students use to study, learn, and communicate with others in their classes as well as others in different setting enrich their learning. The benefits of social interactions seem endless with the advancements of learner-centric communications online. Technology provides multiple windows for social interactions. One increasingly common technology-based strategy is to create online communities of students and adults who collaborate on specific problems (Sherman & Kurshan, 2005). The improvement in communication increases social learning; it is only a matter of how to implement these

ICT skills. Communications through the use of technology create student centered, social learning environment. A shift to a more student-centered instruction may occur initially only whenever technology is used (Matzen & Edmunds, 2007). The main purpose of this paper is to make an inquiry on how social cognition impinges on learner-centered digital classroom in an Educational standpoint.

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